DOCUMENT RESUME

ED 240 358 CE 038 294

AUTHOR Nagy, Stephen
TITLE Curriculum Development Guidelines for WisCom. Guidelines for Curriculum Development for the Wisconsin Competency-Based Occupational Curriculum Data System.
INSTITUTION Wisconsin State Board of Vocational, Technical, and Adult Education, Madison.
PUB DATE [83]
NOTE 52p.
PUB TYPE Guides - Non-Classroom Use (055)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Behavioral Objectives; *Competency Based Education; *Computer Managed Instruction; *Curriculum Development; Definitions; *Educational Objectives; Educational Planning; Guidelines; Information Sources; *Instructional Development; Job Analysis; Material Development
IDENTIFIERS *Wisconsin Competency Based Occup Curr Data System

ABSTRACT

This handbook is designed to provide uniform criteria and a support system to help individuals involved in curriculum-related functions within a school system to implement the Wisconsin Competency Based Occupational Curriculum Data System (WisCom). (The WisCom system is a complete support system for curriculum development and management that involves the use of a computer-based inventory of available curriculum materials in order to facilitate the sharing of resources among involved parties.) Addressed in the individual sections of the guide are the following topics: the nature and scope of WisCom; planning and describing a curriculum project; occupational analysis in curriculum development; the development of program goals; the grouping and sequencing of tasks; the writing of performance objectives; and the development of objective-based evaluations, learning activities, resources, and management systems. (Appendixes to the guide contain sources of information about occupations and curricula, definitions for competency-based instruction, and definitions of curriculum components.) (MN)

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CURRICULUM DEVELOPMENT GUIDELINES for WisCom

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Guidelines For Curriculum Development for the Wisconsin Competency-Based Occupational Curriculum Data System

Produced under the advisory leadership of the Competency-Based Curriculum Task Force of the Wisconsin Board of Vocational, Technical and Adult Education, Dr. Robert P. Sorensen, State Director.

Chairman Dr. Stanley J. Spanbauer

Members Ronald M. Beckman, North Central Technical Institute

Jan Campbell, Gateway Technical Institute

Louis Chinnaswamy, WBVTAE

Dr. Roger Lambert, UW Vocational Studies Center

Dr. Marlena Mackie, Waukesha County Technical Institute

Randi Marcos, VTAE Districts Consortium

Virgil Martinson, Department of Public Instruction

James Mueller, WBVTAE

Stephen Nagy, Fox Valley Technical Institute

Brian Oehler, Mid-State Technical Institute

William Ratzburg, Department of Public Instruction

Keith Ruzicka, UW Vocational Studies Center

Marvin Schrader, Lakeshore Technical Institute

Jean Woolley, Moraine Park Technical Institute

Written by Stephen Nagy, Executive Director

WisCom Curriculum System
Post Office Box 2277, Appleton, Wisconsin 54911
Area Code 414 735-5600

NOTE Special recognition is extended for material excerpted from The Program Development Process Handbook of the Michigan Department of Education. This handbook was developed under the direction of Dr. Robert D. Steely, and incorporates writings by Ms. Betty Brunelle of Wisconsin's Moraine Park Technical Institute. Ms. Brunelle's clear and concise discussion of the curriculum development process was difficult to improve upon, and was utilized at several points from this uncopyrighted publication.

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Why this System?

The WisCom Curriculum System grew out of two needs. The first is to provide better curriculum support services to instructors. The second, to facilitate the sharing of curriculum materials among educators and schools involved in providing similar instruction.

These desirable outcomes have been identified as being related to two factors: 1. the development and organization of curriculum according to uniform criteria--that is, all curriculum materials should contain certain minimum content elements and should be similarly organized, and 2. curriculum should be carefully documented, with clear and concise language and organization.

The system of curriculum development presented in this handbook promotes these two outcomes--uniform criteria and careful documentation. In addition, it provides a support system to help individuals who are involved in curriculum related functions within a school system to work together more effectively.

Introduction to WisCom

The Wisconsin Competency—Based Occupational Curriculum Data System

WHAT IS IT?

WisCom is a complete support system for curriculum development and management functions within an organization.

The WisCom system involves the cooperative efforts of a qualified team of local staff known as the Local WisCom Team.

This Local WisCom Team includes persons representing the functions of curriculum development, coordination, information processing, graphic design, printing, media production, cataloging and dissemination.

FOR WHOM IS IT DESIGNED?

Educators who develop curriculum or are responsible for managing the curriculum resource and the curriculum development function.

HOW DOES IT WORK?

Curriculum projects are planned with a focus on accommodating the needs of teachers and students, not on meeting a rigid set of requirements and standard formats.

Curriculum information is typed or keyed on information processing equipment readily available within the institution.

The various components of the curriculum, such as outlines, tasks, objectives, student learning materials and evaluations are arranged according to a standard organizational structure and indexing system.

The result is a complete curriculum manual which provides a DETAILED PLAN FOR LEARNING. The appearance is attractive and professional. The loose-leaf format makes the curriculum easy to use and to keep up to date.

A computer-based inventory of available curriculum materials is maintained and distributed to member organizations to facilitate sharing. Actual sharing is arranged directly between the involved parties.

WHAT ARE THE ADVANTAGES OF THE WISCOM SYSTEM?

The most important advantage is that WisCom improves understanding and communication about curriculum. This makes sharing of curriculum among educators in the same and in other school systems easier.

There are a number of other advantages. Let us mention some of the most important.

Organized Support System

1. WisCom provides a coordinated support system for instructors as they develop curriculum. This leads to the focusing of creative energy to best advantage, with the support functions carried out by members of the Local WisCom Team. Thus, creative output is is maximized.

Single Information Base

2. Provides a single information (data) base for all curriculum information in each school or school system.

Uniform Organization of Curriculum

3. All newly-developed curriculum meets the same criteria for essential elements and organization.

Professional Appearance

4. Curriculum materials have a more professional appearance, communicating greater prestige to client groups.

Easy Updating

5. Modifications to curriculum are handled quickly and can be easily incorporated into the loose-leaf curriculum manual format.

Cumulative Benefits

6. Curriculum becomes a resource much like plant and capital equipment. Curriculum development expenditures result in cumulative benefits to the organization.

Continuity

7. Continuity of the instructional effort is improved. Staff changes have diminished impact on curriculum.

Computers Not Essential

8. The chief advantages of the system -- uniform criteria and carefully detailed documentation -- can be achieved without local access to sophisticated data processing facility.

Competency—Based Versus Individualized

COMPETENCY-BASED and INDIVIDUALIZED--we want to make sure we all understand that these two terms mean different things.

Competency-based instruction refers to an approach used to determine what skills should be taught and how achievement is to be evaluated. Individualized instruction, on the other hand, involves methodology which focuses on student-based progress.

Some educators argue that individualized methodology forms the ideal framework for competency-based instruction. We have no quarrel with that. But we want to emphasize that group-based, as well as individualized, methodologies can be used with competency-based instruction.

The curriculum development procedure and support system which make up the WisCom plan will accommodate curriculum designed for group-based as well as individualized instructional approaches. This will allow all schools to participate, regardless of their philosophical commitment to individualized instruction. All that is required is a belief that well-organized, carefully documented curriculum does, indeed, enhance the process of instruction. And who can argue with that?

Competency Clarified

We want to take a minute to clarify a common source of disagreement and misunderstanding among educators working with competency-based curriculum.

The term, COMPETENCY, refers to the ability to perform at an acceptable level. It is a qualitative term, not one that describes a specific level of job activity. However, in some circles, competency is used as a synonym for task. In others, it refers to a larger unit of activity, like duty. In this set of guidelines, neither is the case. Here, a duty is a duty, a task is a task. A competency is the ability to perform job skills in a competent way.

Through this interpretation we hope to circumvent an issue which may not be resolveable without unacceptable compromise on the part of some educators whose support is essential to the success of our efforts.

Curriculum Defined

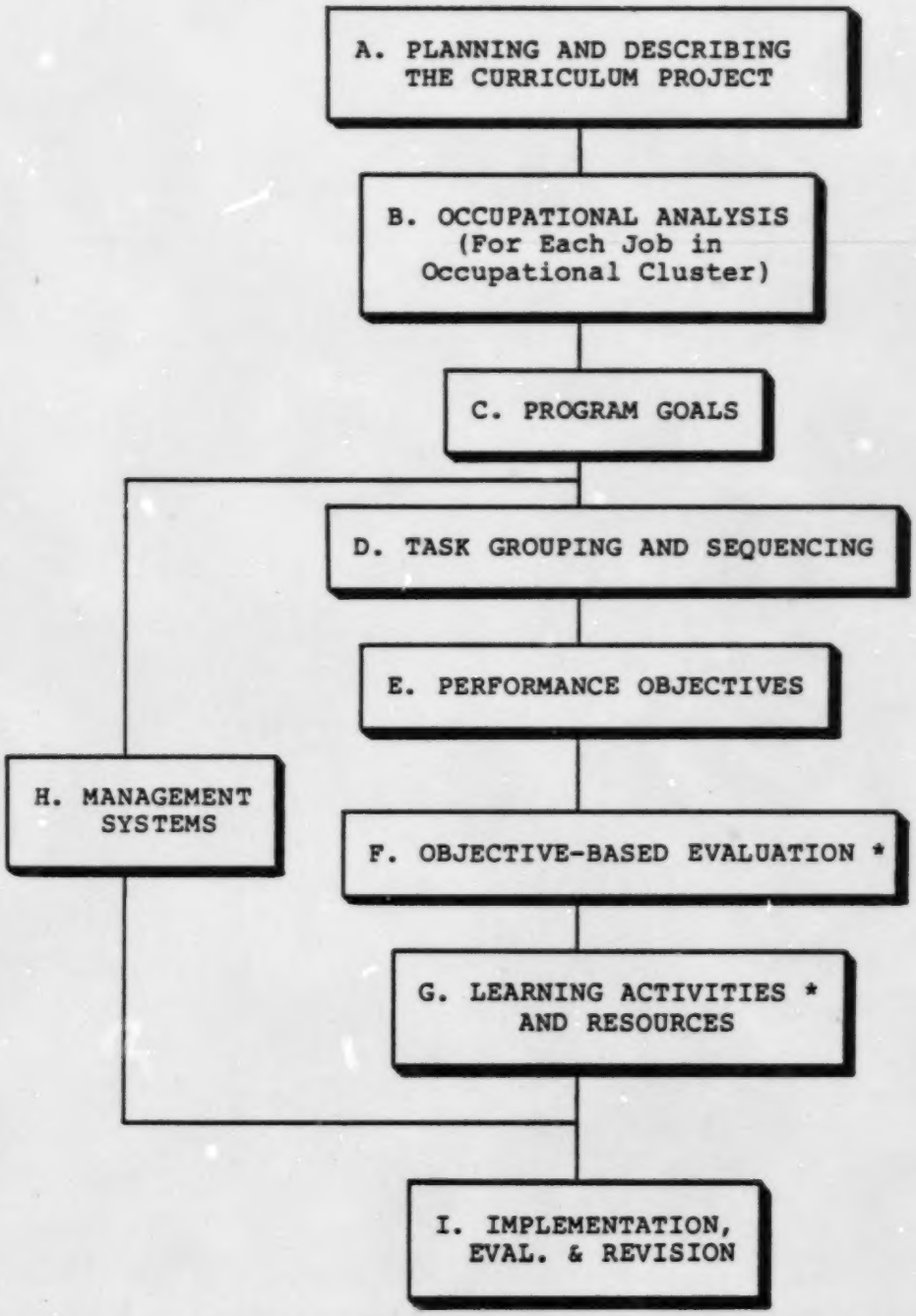
The term CURRICULUM refers to a DETAILED PLAN FOR LEARNING. It may be a plan for a program, several courses, a single course or a part of a course such as a unit or module.

Curriculum CONTENT provides the necessary experiences to gain knowledge, skills and attitudes essential for successful job performance in the occupation for which the curriculum was designed.

Curriculum may be considered to have three purposes. First, it establishes the students' and the instructors' roles in the process of instruction. Second, it communicates to interested persons--employers, students, faculty, and others--what is to be accomplished in the instructional program. Lastly, curriculum specifies the print and non-print resources required to accomplish the instructional goals, and how achievement of these goals will be evaluated.

The process of designing curriculum consists of several steps. These are portrayed in the flowchart that follows.

Curriculum Development Flowchart


A. PLANNING AND DESCRIBING THE CURRICULUM PROJECT
B. OCCUPATIONAL ANALYSIS (For Each Job in Occupational Cluster)
C. PROGRAM GOALS
D. TASK GROUPING AND SEQUENCING
E. PERFORMANCE OBJECTIVES
H. MANAGEMENT SYSTEMS
F. OBJECTIVE-BASED EVALUATION *
G. LEARNING ACTIVITIES * AND RESOURCES
I. IMPLEMENTATION, EVAL. & REVISION

* These two steps are interchanged by some educators. We will not fight about who is right.

Contents and Organization of Wiscom Curriculum

The result of a curriculum development or revision effort in the WisCom System is a COMPLETE PLAN FOR LEARNING which details every phase of the instruction.

This complete curriculum manual contains four types of materials:

1. **GENERAL INFORMATION** A description of the contents of the curriculum package, as well as the instruction it is designed to support.

   Examples: Table of Contents
   Introduction
   Curriculum Profile
   Institutional Data Sheet

2. **INSTRUCTORS' GUIDE AND STUDENT GUIDE** Guidelines for teachers on how to utilize the curriculum most effectively, and for students on how to best learn within the learning system described by the curriculum.

3. **PLANNING AND MANAGEMENT WORKSHEETS** Useful materials developed in the curriculum planning process, and used by teachers in the management of instruction.

   Examples: Job Mobility Chart
   Course Task List
   Course Objectives List
   Media List
   Equipment List
   Student Progress Records

4. **INSTRUCTIONAL MATERIALS** All of the learning materials used by students, including such items as learning modules, handouts, workbooks and the like.

   Examples: Lesson Overview
   Study Guide
   Project Sheets
   Worksheets
   Self Evaluation Exercises

You will note that the information in the next chapter is divided into sections which correspond to the flowchart blocks. At the beginning of each section, a list is provided of the curriculum components that may be developed at that stage in the process. From this list you should select on the CURRICULUM PROFILE worksheet those that are appropriate for your instructional sequence. Subsequent information describes how each curriculum component is developed.

WisCom Multi-Media Implementation Program

To help in the implementation of the WisCom Curriculum System within a new setting, a comprehensive multi-media implementation program has been developed. This program includes the following components:

1. "The WisCom Team Training Series", a training program to prepare a Local WisCom Team within an organization.

2. Publication titled "Curriculum Development Guidelines for WisCom" (also referred to as the Blue Text in The WisCom Team Training Series).

3. Manual titled "Guidelines for the WisCom Team" (also referred to as the Yellow Text).

4. Set of audio visual resource materials which augment the WisCom Team Training Series, and support the WisCom implementation effort.

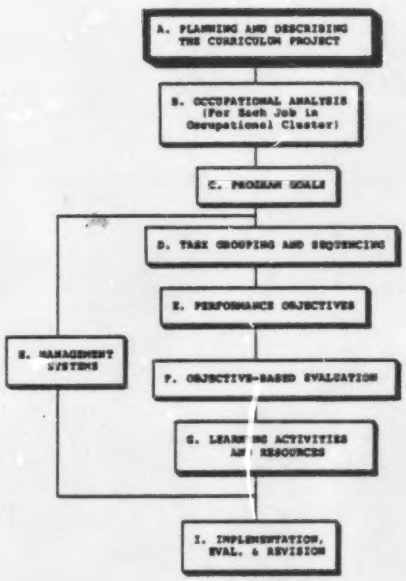
5. Standard packaging system for curriculum materials to provide an attractive, professional appearance and a clear organizational structure.

6. Set of sample curriculum materials to illustrate the application of WisCom standards to various types of instructional plans.

7. Set of support materials to establish a WisCom Curriculum Office within an organization.

Planning and Describing the Curriculum Project

Developing curriculum can be a large or small project, depending on the scope of the instructional sequence involved. In any case, the process begins with planning and describing the curriculum project. The CURRICULUM PROFILE worksheet is a useful tool for accomplishing this.


A. PLANNING AND DESCRIBING THE CURRICULUM PROJECT
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E. PERFORMANCE OBJECTIVES
F. OBJECTIVE-BASED EVALUATION
G. LEARNING ACTIVITIES AND RESOURCES
H. MANAGEMENT SYSTEMS
I. IMPLEMENTATION, EVAL. & REVISION

RELATED CURRICULUM COMPONENTS:

A1. INTRODUCTION

A2. CURRICULUM PROFILE

A3. CURRICULUM PROJECT MANAGEMENT FLOWCHART and WORKSHEET

A4. INSTITUTIONAL DATA SHEET

A5. BIAS-FREE CHECKLIST

CURRICULUM PROFILE - WHAT IS IT?

The CURRICULUM PROFILE is a planning worksheet which serves two basic functions:

1. Describes the project, and identifies the specific curriculum components to be developed. It communicates precisely what is to be accomplished.

2. After the project is completed, it provides an inventory of what components constitute the total set of curriculum.

The process is begun by reviewing the list of potential curriculum components on the CURRICULUM PROFILE worksheet. This list is arranged according to the four categories of the standard WisCom indexing system. The illustration below shows the printed index divider set used in WisCom curriculum manuals to help arrange the completed materials into these four categories.

SELECTING CURRICULUM COMPONENTS

In selecting the specific curriculum components to be developed, there is a single guiding principle to keep in mind. "Provide a good mix of components to create a COMPLETE, DETAILED PLAN FOR LEARNING."

Studying samples of completed curriculum materials will be helpful in planning new curriculum projects. There should be materials in each of the four categories. Many of the components in sections 3 and 4 are optional. Select those that are needed to provide a complete plan. The items marked with asterisks (*) should be considered essential for every complete curriculum package at the course level.
When the CURRICULUM PROFILE has been completed, everyone involved with the project will have a clear idea of what is to be accomplished. The exciting challenge of designing effective instruction can now begin.

To help plan and schedule the various aspects of the project, the CURRICULUM PROJECT MANAGEMENT WORKSHEET and FLOWCHART has been developed.

CURRICULUM PROJECT MANAGEMENT WORKSHEET AND FLOWCHART

The FLOWCHART depicts graphically the activities involved in completing a curriculum project. The CURRICULUM MANAGEMENT WORKSHEET lists the key activities, and provides a useful format for planning due dates, lead times and recording notes on activities. This worksheet is generallly completed with the aid of the Local WisCom Curriculum Specialist who helps coordinate the project with the other members of the Local WisCom Team.

SKELETON CURRICULUM MANUAL

After the basic content outline of the curriculum project is developed, a "skeleton" manual is set up for the project. This skeleton manual serves as a temporary project file during development. As such, it helps to organize the efforts of the curriculum developer so that the results can be more easily interpreted by the information processing staff. This leads to smoother flow of project activities from rough draft to finished curriculum, through the inevitable round of reviews revisions.

School or Organization _____

Developer _____

CURRICULUM PROFILE

DESCRIPTION (Describe to lowest level applicable.)

TITLE-Program: _____ Number _____
Course: _____ Number _____
Unit: _____ Number _____
Task/Module: _____ Number _____

NARRATIVE DESCRIPTION OF INSTRUCTIONAL CONTENT

APPROXIMATE LENGTH OF INSTRUCTION (Full-time weeks or hours) _____

Checkmarks (X) opposite the descriptors listed below indicate the contents and characteristics of the curriculum materials identified above.

MANAGEMENT STRATEGIES

This set of curriculum materials supports the following management strategies:

Individualized Instruction	____	Team Teaching	____
Group-Based Instruction	____	Stacked Classes	____
Multiple Entry/Exit	____	Modular Enrollment	____
Year-Round Operation	____	Outreach Delivery	____

CURRICULUM COMPONENTS

This set of curriculum materials contains the following components. The items marked with asterisks (*) should be considered essential for every complete curriculum plan at the course level.

1. GENERAL INFORMATION
   - A. Table of Contents* . . . . . ____
   - B. Introduction* . . . . . ____
   - C. Curriculum Profile* . . . . . ____
   - D. Institutional Data Sheet* . . . . . ____
   - E. Bias-Free Checklist* . . . . . ____

2. INSTRUCTORS' GUIDE AND STUDENT GUIDE

A. Instructor's Guide* . . . . . ____
B. Student Guide* . . . . . ____

3. PLANNING AND MANAGEMENT WORKSHEETS

A. Job Description(s) . . . . . ____
B. Job Mobility Chart . . . . . ____
C. Occupational Analysis Chart . . . . . ____
D. Task Performance Guide . . . . . ____
E. Task Rating Form . . . . . ____
F. Program Goal List . . . . . ____
G. Program Task List . . . . . ____
H. Program Content Outline . . . . . ____
I. Program Blocking Worksheet . . . . . ____
J. Program Course List . . . . . ____
K. Course Description(s)* . . . . . ____
L. Course Task List* . . . . . ____
M. Course Content Outline* . . . . . ____
N. Objective Development Worksheet . . . . . ____
O. Course Objectives List* . . . . . ____
P. Objective-Based Student Evaluations* . . . . . ____
P1. Oral/Verbal . . . . . ____
P2. Computer-Based . . . . . ____
P3. Paper-Pencil . . . . . ____
P4. Performance Checklist . . . . . ____
P5. Product Checklist . . . . . ____
P6. Performance/Product Checklist . . . . . ____
R. Evaluation Answer Sheet* . . . . . ____
S. List of Student Evaluations . . . . . ____
T. Resource List . . . . . ____
T1. Media List* . . . . . ____
T2. Equipment List . . . . . ____
T3. Materials/Supplies List* . . . . . ____
T4. Resource Persons & Organizations List . . . . . ____
U. Evaluation of Course . . . . . ____
V. Student Progress Records* . . . . . ____
W. Learning Contract . . . . . ____

OTHER:

X. _____ ____

Y. _____ ____

Z. _____ ____

4. INSTRUCTIONAL MATERIALS

A.	Instructional Modules**	____
	A1. Title Sheets	____
	A2. Overview*	____
	A3. Study Guide*	____
B.	Information Sheets	____
C.	Assignment Sheets	____
D.	Project Sheets	____
E.	Job Sheets	____
F.	Procedure Sheets	____
G.	Lab Experiments	____
H.	Worksheets	____
I.	Practice Exercises	____
J.	Review Exercises	____
K.	Self Evaluations	____
L.	Self Progress Reviews	____
M.	Vocabulary List	____
N.	Note Taking Guide Sheets	____
O.	Professional Reading Guides	____
P.	Field Trip Guides	____
Q.	Augmentation Activity Guide	____
R.	Quest Experiences	____
S.	Textbook/Learning Manual (locally produced)	____

OTHER:

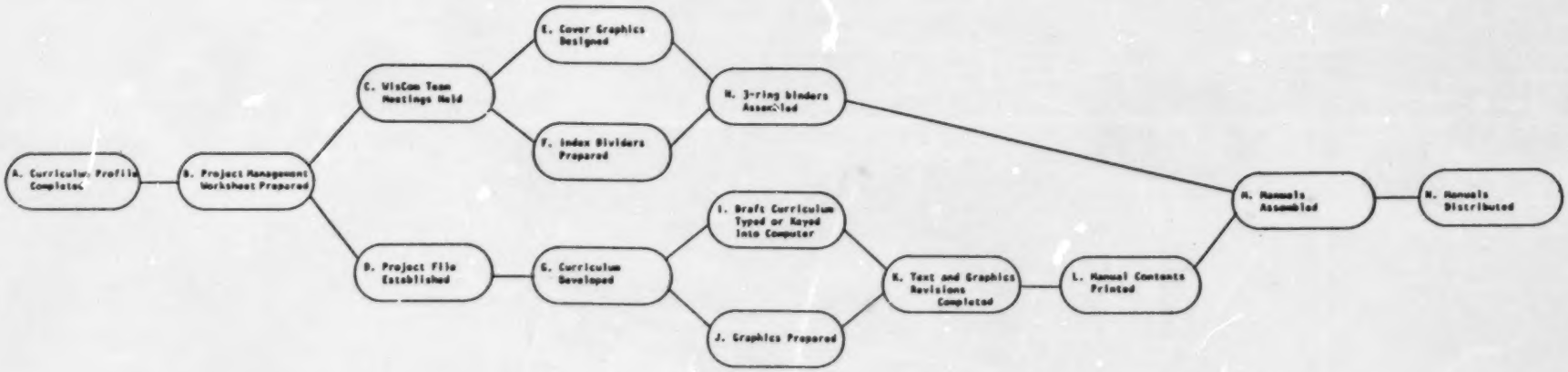
T.	_____	____
U.	_____	____
V.	_____	____
W.	_____	____
X.	_____	____

**The term "module" is an optional one based on individual preference. Other terms such as unit, lesson or topic can also be used.

DATE

PROJECT TITLE _____ DEVELOPER _____ SCHOOL _____

The WisCom Curriculum Development Process


A. Curriculum Profile Completed
B. Project Management Worksheet Prepared
C. WisCom Team Meetings Held
D. Project File Established
E. Cover Graphics Designed
F. Index Dividers Prepared
G. Curriculum Developed
H. 3-ring binders Assembled
I. Draft Curriculum Typed or Keyed into Computer
J. Graphics Prepared
K. Text and Graphics Revisions Completed
L. Manual Contents Printed
M. Manuals Assembled
N. Manuals Distributed

Note: Yellow overlay indicates progress of project to date.

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Curriculum Project Management Worksheet

No.	Activity	Completion Date	✓	Lead Time	Related Information
A.	CURRICULUM PROFILE Completed				
B.	PROJECT MANAGEMENT WORKSHEET Compl.				
C.	WisCom Team Meetings Held				
D.	Project Files Established				
E.	Cover Graphics Designed				
F.	Index Dividers Prepared				
G.	Curriculum Developed * (See below)				
H.	3-ring Binders Assembled				
I.	Draft Curriculum Keyed or Typed				
J.	Graphics Prepared				
K.	Text & Graphics Revisions Completed				
L.	Manual Contents Printed				
M.	Manuals Assembled				
N.	Manuals Distributed				
*	The following is a breakdown of G. above for this specific project, detailed at the course level.				
G1	Course Task List				
G2	Course Objectives List				
G3	Course Content Outline				
G4	Course Description				
G5	Module Overviews				
G6	Module Study Guides				
G7	Module Resources				
G8	Objective-Based Evaluations				
G9	Balance of Planning & Mgmt. Worksht.				
G10	Instructors' Guide & Student Guide				
G11	Balance of General Information				
				20	

Occupational Analysis in Curriculum Development

OCCUPATIONAL ANALYSIS DEFINED

The development of competency-based occupational curriculum always begins with a systematic occupational analysis. This ensures that the instructional content in the curriculum being developed--whether program, course, unit or module--is valid.

Actual curriculum projects undertaken under WisCom may be course-level projects based on already available task inventories and existing program goals. When this is the case, these stages on the flowchart are bypassed.

Definition: OCCUPATIONAL ANALYSIS - A process that examines an occupation and documents the knowledge and skills required for successfully fulfilling the requirements of the occupation.

RELATED CURRICULUM COMPONENTS:

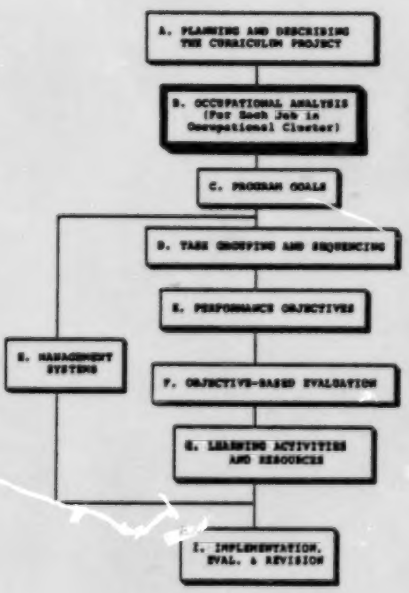
B1. JOB DESCRIPTIONS

B2. JOB MOBILITY CHART

B3. OCCUPATIONAL ANALYSIS FORM

B4. TASK RATING FORM

B5. TASK PERFORMANCE GUIDE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E. PERFORMANCE OBJECTIVES
G. MANAGEMENT SYSTEMS
F. OBJECTIVE-BASED EVALUATION
H. LEARNING ACTIVITIES AND RESOURCES
I. IMPLEMENTATION, EVAL. & REVISION

REPORTING THE RESULTS OF OCCUPATIONAL ANALYSIS

The results of an occupational analysis may be reported in several formats. However, the information will describe the job activities at several levels of specificity. These levels are illustrated in the diagram below:

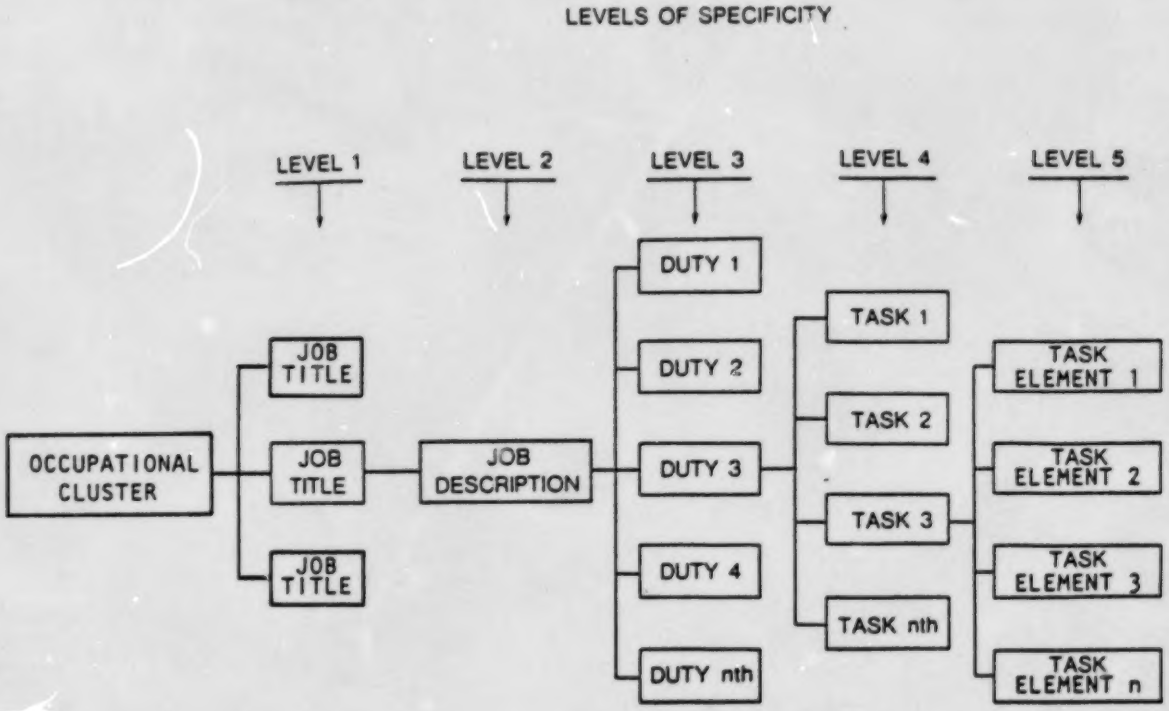


Diagram adapted from R.D. Steeley, The Program Development Process Handbook, Michigan Department of Education.

The levels are defined as follows:

JOB (OCCUPATION) TITLE - An identifying term for the job/ occupation.

JOB DESCRIPTION - A narrative description of the job in general terms, sometimes divided into sections such as Duties, Responsibilities, Special Aptitudes, Educational Prerequisites, etc.

DUTY - A group of related tasks, which constitutes a major area or segment of work within a job.

TASK - A measurable, meaningful element of work from a larger occupational activity (duty) having a definite beginning and ending point.

TASK ELEMENTS - Steps of procedure or activities in the performance of a task. In the V-TECS catalogs, task elements are listed as a step-by-step sequence in the "performance guide." Task elements are very useful in designing learning experiences, specifying tools, equipment, facilities and other resources, as well as in designing objective-based evaluation activities.

Tasks are the key building blocks that make up an occupation. In the occupational analysis, each task performed by workers in a given occupation should be a logically differentiated segment of work activity. The task, as previously illustrated in the diagram, describes a job activity that is intermediate in specificity between a duty and a task element. A task generally results in some type of product. The product can be the completion of a physical activity involving tools and/ or materials or can be the outcome of decision making.

Some educators have adopted the term "competency" to express satisfactory performance of a task. The difference is largely one of semantics, rather than substance. For sake of uniformity, tasks are considered to be the lowest common denominators of occupational education in the WisCom curriculum system.

JOB DESCRIPTIONS AND JOB MOBILITY CHARTS

Preparing Job Descriptions

JOB DESCRIPTIONS provide the foundation for an occupational analysis. They describe the duties, responsibilities and other characteristics of each job within the occupational cluster being studied.
A variety of job descriptions should be collected from employers prior to undertaking the occupational analysis.

Preparing a Job Mobility Chart

Definition: JOB MOBILITY CHART - A grouping of jobs within an occupational cluster which illustrates employment possibilities and advancement potential with various levels of educational preparation.

The JOB MOBILITY CHART provides a useful tool for deciding jobs to be addressed by an instructional program, as well as to communicate employment opportunities to students and the general public.

Occupational analysis involves the study of each job within the occupational cluster. Each job is analyzed separately, with the results being merged later as program goals and tasks are specified.

There are a number of techniques which can be used to complete an occupational analysis. The following is a brief description of the major ones. For specific information and help in completing one in your area of interest, contact the curriculum specialist in your school.

OBSERVATION - Those conducting the occupational analysis go to the work site, and record the observed activities.

TASK SURVEY - A preliminary task list is prepared from sources listed in the Appendix. This listing is distributed to incumbent workers for reaction. Provision must be made to enable an incumbent worker to expand the listing.

WORKSHOP - Persons working in the occupation being analyzed are invited to participate in a structured workshop activity to derive a task listing or to react to a previously developed task listing.

INTERVIEWS - Arrangements are made to interview persons employed in the occupation to identify duties and their related tasks which are performed in the occupation.

Although the task statements form the basis for curriculum content and are, therefore, essential in analyzing the occupation, they are derived from the duties which are performed in the occupation. Since a number of tasks generally aggregate to each duty, the duties required for the job(s) should be determined at the beginning of the occupational analysis.

To clarify variations in terminology, we should mention that some educators speak of duty-level responsibilties as broad competencies, and task level responsibilities as specific competencies.

A duty listing may be obtained and compiled from a number of sources:

1. Advisory Committee members
2. Job description
3. Related literature (trade and professional journals)
4. Existing instructional programs
5. Approval and accrediting agencies
6. Professional associations and organizations
7. Incumbent workers and their supervisors

It should be noted that all tasks within a duty grouping are not taught in sequence. That is, elementary tasks in several duty categories may be taught before more advanced tasks are addressed. However, it is important that the tasks identified in the occupational analysis be related to their respective duties in order to insure the proper level of specificity when performing the occupational analysis.

CONDUCTING AN OCCUPATIONAL ANALYSIS

The occupational analysis consists of the development of a task list. This listing of tasks then provides the basis for curriculum content.

Task statements should be clear and concise. They are simply declarative statements that begin with an action verb. Each statement should address a single activity.

In addition to duties and tasks, the OCCUPATIONAL ANALYSIS FORM provides a means of recording other relevant items of information.

ITEMS TO BE NOTED IN CONDUCTING THE OCCUPATIONAL ANALYSIS

1. Tools and equipment used
2. Materials and supplies
3. Cognitive skills (thinking) and psychomotor skills (doing)
4. Safety considerations
5. Applied mathematics and science
6. Communication modes
7. Sequencing of tasks to perform a given duty

Consensus and Verification of Duties and Tasks

Consensus and verification of occupational analysis findings by persons employed in the occupation and by persons in supervisory roles of that occupation is important in order to eliminate bias.

Consensus can be rather easily reached if the technique selected for the occupational analysis is a workshop setting when a number of persons employed in the occupation or persons related to the occupation come together to assist in the occupational analysis. The other techniques suggested for conducting the occupational analysis require some additional steps to obtain consensus.

If the observation or interview technique is employed, a master listing of tasks should be prepared after the analysis is complete. This listing should then be returned to incumbent workers and possibly supervisors for rating the tasks with regard to frequency of performance and importance of the task to the job. Following this, the curriculum developer can analyze the results and formulate the final task listing to be used as the basis for curriculum.

If the task survey technique is used, a provision can be made on the task listing form to permit the frequency rating and importance rating of the task. Responses should be averaged to obtain the concensus of those doing the rating.

Developing Task Performance Guides

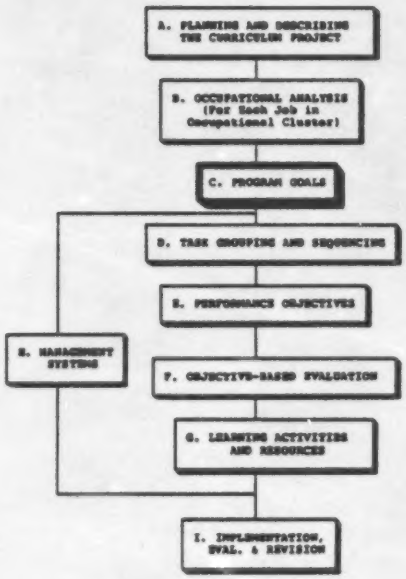
A final step in occupational analysis is to develop a TASK PERFORMANCE GUIDE for each task which has been selected essential for successful job performance.

The TASK PERFORMANCE GUIDE details the performance elements which make up the correct procedure for getting the job done. All V-TECS catalogs present this kind of information, providing substantial savings of time and effort in jobs for which V-TECS catalogs are available.

Developing Program Goals

Once the tasks and duties included in an occupation have been identified and verified, the parameters of the educational program itself have been established. The development of PROGRAM GOALS is the next step in the competency-based curriculum design process. With PROGRAM GOALS in place, the cohesiveness in design and structure of the program curriculum can be assured.

DEFINITION: PROGRAM GOALS - Broad student-oriented action statements which identify the knowledges, skills, attitudes a student will demonstrate before completion of an instructional program.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G. LEARNING ACTIVITIES AND RESOURCES
H. MANAGEMENT SYSTEMS
I. IMPLEMENTATION, EVAL. & REVISION

RELATED CURRICULUM COMPONENTS:

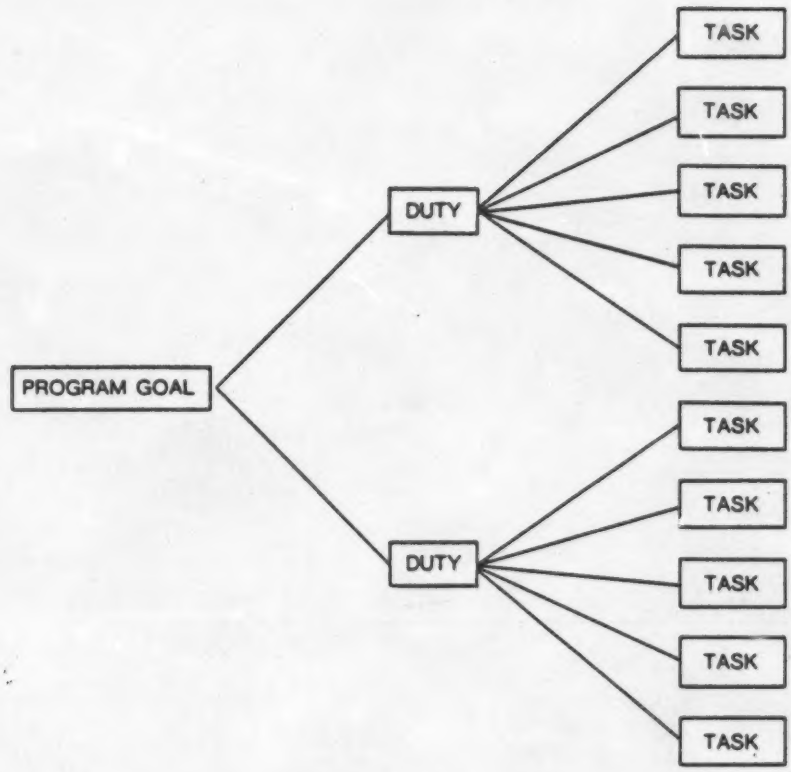
C1. PROGRAM GOAL LIST

C2. PROGRAM TASK LIST

C3. PROGRAM CONTENT OUTLINE

PROGRAM GOALS do not require statements of performance standards (criteria), which makes them substantially different from PERFORMANCE OBJECTIVES. The goal statements encompass all duties/tasks identified in the occupational analysis. Each PROGRAM GOAL is comprised of one or more duties. Consequently, 15 to 25 goal statements can address many duty statements and a large number of task statements for most one or two year vocational-technical programs. The figure on the next page illustrates the relationship between goal statements, duties and tasks.

When PROGRAM GOALS have been written, the Program Advisory Committee again has a vital role to play. It is important that the committee review the goals and determine if these broad statements of student outcomes describe the program expectations.



The following questions will provide a guide when reviewing the PROGRAM GOALS:

1. Do the goals adequately represent the duty/task listing?

2. Are there learning outcomes which have been omitted?

3. Will the student who achieves these goals be able to meet occupational demands?

4. Are the goals stated clearly enough to be understood by students and by those who will write performance objectives and design learning activities?

5. Is the framework for the development of the other curriculum components (supportive courses, general education courses) now in place?

PROGRAM GOALS are valuable tools in communicating the program to interested "publics" including prospective students, faculty in other programs, administrators, counselors and prospective employers.

As subsequent curriculum design activities are undertaken, keep in mind that the PROGRAM GOALS have defined the target toward which all planning for a competency-based program must be aimed. PROGRAM GOALS are the destination. The routes and modes of travel for the student will for the student will later be detailed.

PREPARING OTHER RELATED CURRICULUM COMPONENTS

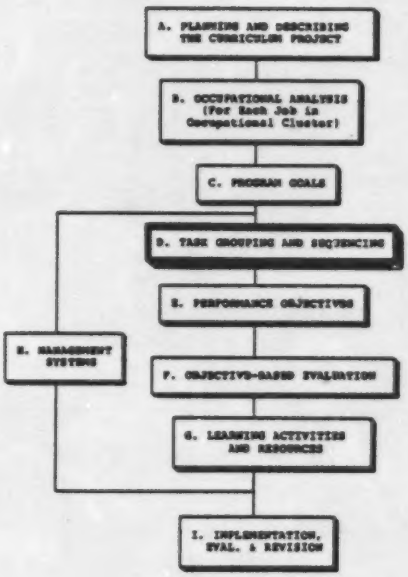
In addition to the PROGRAM GOAL LIST, there are two other useful planning and management worksheets that should be considered at this stage. These are the PROGRAM TASK LIST and PROGRAM CONTENT OUTLINE.

The PROGRAM TASK LIST identifies the tasks which were identified for inclusion in the instructional program, from among all the tasks considered during the occupational analysis. The PROGRAM CONTENT OUTLINE is a listing of the main topics covered within the program, laid out in outline format.

Grouping and Sequencing Tasks

After the program goals have been written, the program developer is prepared to determine the format for instruction. This implies the grouping of duties and tasks into courses. In this section, several convenient formats are provided for describing these relationships.

DEFINITION: COURSE - A number of related performance objectives taught under a single title and credit/hour assignment.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H. MANAGEMENT SYSTEMS
I. IMPLEMENTATION, EVAL. & REVISION

RELATED CURRICULUM COMPONENTS:

D1. PROGRAM COURSE LIST

D2. PROGRAM BLOCKING WORKSHEET

D3. COURSE TASK LIST

D4. COURSE DESCRIPTIONS

D5. COURSE CONTENT OUTLINE

FACTORS TO CONSIDER

Listed below are a number of considerations for grouping duties and tasks into courses.

1. Most persons learn by going from the familiar to the unfamiliar.
2. Objectives should be sequenced logically, from simple to complex.
3. Pre-requisite objectives should be sequenced to achieve terminal objectives.
4. Pre-requisite information the student needs to achieve the objective should be sequenced prior to the need for that information.

Additional factors that influence the grouping are:

1. Facilities and equipment needed for student performance of duties and tasks.

2. The instructional methods to be used.

3. The institutional scheduling format; i.e., semester, quarter, mini courses.

The structure for the instruction, that is, the COURSE CONTENT OUTLINE can now be prepared for the grouped duties and tasks. COURSE DESCRIPTIONS may be written. Course numbers, credit hours, and contact hours may be assigned as well as pre-requisite courses identified. In the Wisconsin VTAE system, course approval requests may now be processed.

In certain instances, courses might already exist that address the objectives identified for a given course. This is particularly true for program support courses such as mathematics, technical English, chemistry, etc., and for general education courses. In these cases, the existing course or courses should be built into the program requirements.

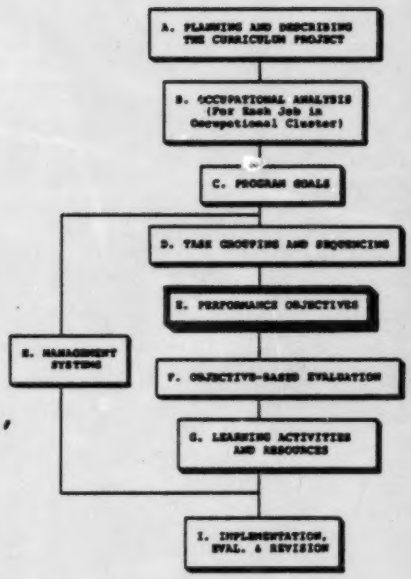
Another useful curriculum component should be mentioned here. The PROGRAM BLOCKING WORKSHEET is a diagram which provides a visual representation of the instructional blocks (courses or series of courses) which make up the program. It may also indicate "job-out" possibilities at various exit points, with less than full program completion.

Writing Performance Objectives

PERFORMANCE OBJECTIVES are the heart of competency-based instruction.

While PROGRAM GOALS define the broad parameters for student outcomes in a program, it is the orderly progression through PERFORMANCE OBJECTIVES toward these goals which provides unity and coordination within an instructional program. Attainment of the PROGRAM GOALS must be reflected through student achievement of a series of PERFORMANCE OBJECTIVES.

DEFINITION: PERFORMANCE OBJECTIVE - A statement of instructional intent which describes the condition under which the task is to be performed, the specific action to be demonostrated and the minimum standard of acceptable performance which must be exhibited.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RELATED CURRICULUM COMPONENTS:

E1. OBJECTIVE DEVELOPMENT WORKSHEET

E2. COURSE OBJECTIVES LIST

The OBJECTIVE DEVELOPMENT WORKSHEET provides a format to build on the previously developed TASK PERFORMANCE GUIDES, recording performance objective(s) related to each identified task.

All performance objectives to be covered in the course are aggregated into a COURSE TASK AND OBJECTIVE LIST. This list correlates objectives with tasks, and with units and modules if desired, to provide a convenient cross-referencing system.

The development of PERFORMANCE OBJECTIVES in the curriculum design process:

MUST OCCUR BEFORE

* instructional methodology is planned
* equipment and facility requirements are determined
* testing approaches are developed
* grading requirements are determined

SHOULD NOT OCCUR UNTIL

* occupational tasks are identified and verified
* program goals are written

Each PERFORMANCE OBJECTIVE describes student performance, using action verbs, the conditions under which that performance must occur, and the standard(s) or quality of performance required. The objective is written so both instructor and student know exactly what is required, and can easily judge whether or not the student's effort has been successful. Each objective is derived from one or more of the tasks, and has a direct tie to one or more of the established PROGRAM GOALS.

All components of the objective (conditions, performance, criteria) are written so that achievement, (or lack of it), can be precisely measured. In addition, performance on objectives is the evidence used by the instructor to ascertain evaluation levels or grades for a segment of instruction.

It can be said that a PERFORMANCE OBJECTIVE is a description of the testing situation. Student achievement on a group of course objectives makes up the course grade, rating, or final evaluation.

Performance specified in course objectives can be psychomotor ("hands-on"), cognitive (knowledge), or affective (attitudes, values, judgements). For some programs, writing all three types of objectives is appropriate when dictated by the occupational task analysis.

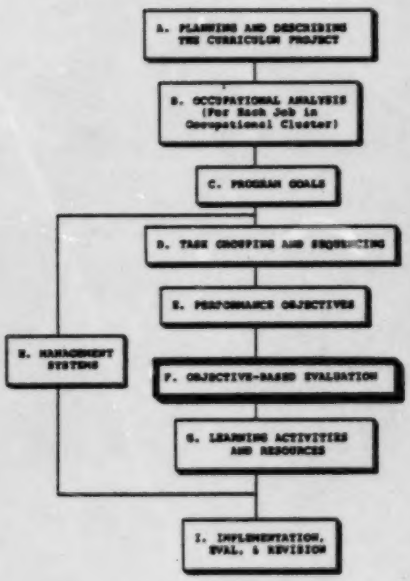
Some educators feel that PERFORMANCE OBJECTIVES should be written at two levels. The first, comprehensive terminal objectives, and the second, enabling objectives. Enabling objectives deal with smaller units of activities, the completion of which will result in the achievement of the terminal objective. (Other terms used to express the same relationships are global and specific objectives.) This differentiation between levels of objectives works well in some occupations, but may be cumbersome in others.

Many educators feel that terminal performance objectives should be written at a level -- usually addressing a simple task -- which will encompass the learning activities logically grouped within a single module. They argue that an objective which is any larger than that is too far removed from a direct and clear relationship to single learning activities, performance criteria and evaluation techniques. We will not debate which is correct, and suspect that both may be in certain occupational and program areas. With WisCom, either approach can be used.

PERFORMANCE OBJECTIVES address student behaviors or performances. They define the end result of instruction. Performance objectives do not dictate instructional strategies. They do provide direction for planning teaching approaches and for identifying resources.

Developing Objective-Based Evaluation

Now that the Performance Objectives have been developed, the next logical step in the curriculum design process is the preparation of student testing procedures and instruments. In a competency-based program of learning, the testing can actually be determined before teaching methods and activities are planned. Some educators, nonetheless, prefer to plan learning activities and resources before designing the evaluation techniques. Both approaches have been used successfully.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The purpose of testing in a competency-based program is to determine whether or not each student has achieved the PERFORMANCE OBJECTIVES. Testing for this purpose is called OBJECTIVE-BASED EVALUATION (Some refer to it as Criterion-Referenced Testing.) The very phrase, OBJECTIVE-BASED EVALUATION, defines the approach.

DEFINITION: OBJECTIVE-BASED EVALUATION - Testing which references and uses as its basis the stated performance objectives. (Criterion referenced)

RELATED CURRICULUM COMPONENTS:

F1. STUDENT EVALUATIONS

- a. Oral/Verbal
- b. Computer-Based
- c. Paper-Pencil
- d. Performance Checklist
- e. Product Checklist
- f. Performance/Product Checklist

F2. EVALUATION ANSWER KEYS

In OBJECTIVE-BASED EVALUATION, the test instrument or testing situation must "match" an objective or a series of objectives--nothing more, nothing less!

As stated previously, PERFORMANCE OBJECTIVES are written before other teaching/learning activities are specified. When the objectives are completed, the tests and testing approaches have also essentially been completed. As discussed in the previous section of this handbook, performance objectives describe the testing situation. Each objective clearly indicates what a student must do or know (performance) and under what condition(s) he/she must demonstrate that performance. The objective, thus, details for the instructor and for students what performance will be tested, measured and/or evaluated. Likewise, the objective states "how well" this performance must be done or in accordance with standards or references which dictate the student performance. The "how well" for each performance is the criterion component and is used by the instructor to decide if a student's performance was acceptable.

OBJECTIVE-BASED EVALUATION can take as many different forms as there are performances. The testing can be paper and pencil if that is the type of response the objective requires. If the objective calls for a "hands-on" activity, then the test must measure that objective as stated. But, whatever action is required by the objective, the quality of that performance must be judged against the stated criteria.

In an instructional program using OBJECTIVE-BASED EVALUATION, each learner's performance or achievement is compared to each stated course objective. This is not the same as "norm-referenced evaluation" where each learner's achievement is weighed against the level attained by the entire class or group.

After all the testing and evaluation processes have been determined, some other considerations related to the testing and grading must be given attention.

1. Should a prerequisite skills test and/or exemption (advance standing/placement) test(s) be developed?

2. Should there be an allowance for individual differences in learning? What if a student does not achieve the objective the first time? What will be the policy for allowing students re-take opportunities on OBJECTIVE-BASED EVALUATION?

3. How will a student's achievement on objectives be reflected in a grade? Will it be possible or practical to identify objectives which represent minimum learnings or essential performances? Could these performances be represented by a "passing" or minimum grade?

4. Can the grading system accommodate student achievement that is "over and above" the minimum performance?

5. What system will be used to record student achievement of objectives and to report these competencies to students and employers?

Teaching approaches are all directed toward helping students achieve established performance objectives. OBJECTIVE-BASED EVALUATION will measure and report the student's achievement of those objectives.

Developing
Learning Activities and Resources

The intent of the instructional process is to insure that students achieve as prescribed in the performance objectives. The manager of the instruction must determine the instructional methods that can most effectively insure learning.

DEFINITION: LEARNING ACTIVITIES - Instructional methods used for the delivery of instruction, including the integration of facilities, equipment, instructional materials and teaching aids.

RELATED CURRICULUM COMPONENTS:

G1. MODULE* TITLE SHEET

G2. MODULE* OVERVIEW

G3. MODULE* STUDY GUIDE

G4. INFORMATION SHEETS

G5. ASSIGNMENT SHEETS

G6. PROJECT SHEETS

G7. JOB SHEETS

G8. PROCEDURE SHEETS

G9. LAB EXPERIMENTS

G10. PRACTICE EXERCISES

G11. REVIEW EXERCISES

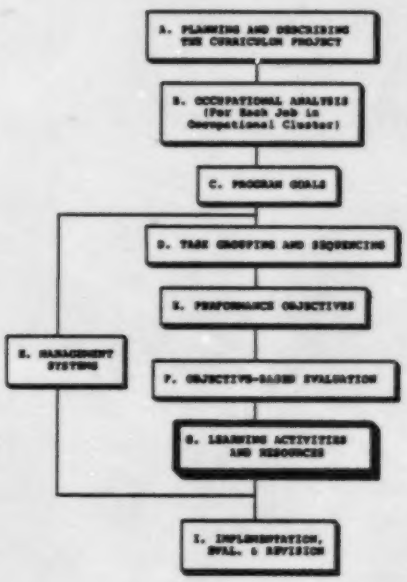
G12. SELF EVALUATIONS

G13. SELF PROGRESS REVIEWS

G14. OCCUPATIONAL VOCABULARY LIST

G15. NOTE TAKING GUIDE SHEETS

G16. PROFESSIONAL READING GUIDES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NOTE: This is only a suggested list to consider. There are many other types of instructional materials in use by creative educators.

* The term "module" is optional. Could be unit, lesson, topic, etc.

G17. FIELD TRIP GUIDES

G18. AUGMENTATION UNITS

G19. QUEST EXPERIENCES

G20. TEXTBOOK/LEARNING MANUAL (LOCALLY PRODUCED)

The selection of teaching methods is often based on professional judgment. However, the most influential factor in selecting the approach to be used is the student performance required as specified in the performance objective. The methods selected to teach cognitive (knowing) skills obviously should be different from those selected to teach psychomotor (doing) skills.

Some considerations for selecting instructional techniques are:

1. Select the method that requires a similar response to that called for in the performance objective.

   Example: If the performance objective specifies that the student be able to weld a pipe to withstand 125 psi., the teaching strategy should enable the student to actually weld and test the pipe.

2. Select the method that causes the student to respond as closely as possible to the response that would be called for on the job.

   Example: If a given occupation requires the worker to prepare material requisitions, the teaching strategy would be for the student to complete examples of requisition forms that are utilized by business, as opposed to reading or being lectured about preparing requisitions.

3. Select the method that permits the student to give the greatest number of correct responses per unit of time.

   Example: If the performance objective specifies that the student identify various architectural styles, the teaching strategy would be to present photographs or slides rather than to take a time-consuming field trip to observe and identify architectural styles.

4. Select a method that takes into consideration the experiences of the students.

   Example: If students have prior educational or work experiences related to the course content, provision should be made for not requiring the student to repeat that which has been previously learned.

In occupational education it is desirable, in most instances, to teach psychomotor skills by enabling students to use tools, equipment, and materials that are actually used in the occupation. If this is not possible because of resource limitations, alternatives such as an internship, where the students can learn in an actual work environment, should be considered. Simulation of the task being taught is another technique that can be employed.

Listed below are a number of instructional techniques from which an appropriate one or ones may be selected:

INSTRUCTIONAL TECHNIQUES

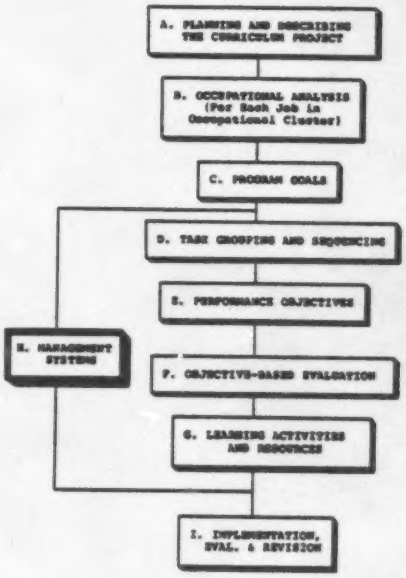
Lecture	Auto-Tutorial
Demonstration	Cooperative Education
Discussion	Internship
Role Playing	Work Experience
Case Study	Shop or Laboratory Activity
Programmed Learning	Independent Study

Developing Management Systems

Developing management systems is an important adjunct to developing curriculum. Effective management support insures that the implementation of instruction will be smooth and trouble-free.

While many of the management systems, such as registration and scheduling are often addressed on the institutional level, others may relate to a specific program, course or sequence of instruction. Examples of these are student orientation, evaluation of instruction, student progress records, etc.

Management systems are often developed simultaneously with curriculum and may involve other school support staff. The sample PLANNING AND MANAGEMENT WORKSHEETS in the list of related curriculum components below will serve to illustrate some of the useful outcomes of activity in this category.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RELATED CURRICULUM COMPONENTS:

H1. STUDENT GUIDE

H2. INSTRUCTORS' GUIDE

H3. STUDENT PROGRESS RECORD

H4. MEDIA LIST

H5. EQUIPMENT LIST

H6. MATERIALS/SUPPLIES LIST

H7. RESOURCE PERSONS & ORGANIZATIONS LIST

H8. EVALUATION OF COURSE

H9. INSTITUTIONAL DATA SHEET

H10. INTRODUCTION (TO CURRICULUM PACKAGE)

H11. TABLE OF CONTENTS (TO CURRICULUM PACKAGE)

Appendix - A

Sources of Information About Occupations and Curriculum

There is much information available about occupations and curriculum. Thorough research can save costly development time and effort. Before undertaking an occupational analysis or sizable curriculum development project, the following sources of existing information should be checked out. In addition, curriculum developed by other schools should be considered.

PROFESSIONAL ORGANIZATIONS

Persons currently employed in the occupation for which the program is being developed would be knowledgeable about any local, state, or national professional organization which has an interest in the occupational field. Professional organizations have, in many cases, a wealth of information about occupational requirements and about related curriculum. In addition, they often have suggestions for facilities, equipment, and faculty qualifications.

PROGRAM ACCREDITATION, LICENSING, CERTIFICATION AND REGISTRATION AGENCIES

Most all occupations which have licensure, certification, or registration requirements are associated with professional organizations. These organizations can provide details for compliance with the requirements. In addition, State law mandates a license to practice certain occupations.

The Wisconsin Department of Regulation and Licensing may be contacted for information about those occupations which require licenses or registration. Address: 1400 East Washington Avenue, Madison, WI.

OCCUPATION DESCRIPTIONS

Occupational descriptions can provide useful overviews of an occupation. occupation. These overviews often suggest key job duties around which job task statements may be developed. Listed below are two sources that are widely used for occupational descriptive information:

DICTIONARY OF OCCUPATIONAL TITLES (DOT)
produced by the U.S. Department of Labor, Manpower Administration

OCCUPATIONAL OUTLOOK HANDBOOK
produced by the U.S. Department of Labor, Bureau of Labor Statistics

CURRICULUM INFORMATION

A number of sources for researching curriculum information about a given program are listed below.

THE NATIONAL CENTER FOR RESEARCH IN VOCATIONAL EDUCATION
Ohio State University
1960 Kenny Road
Columbus, OH 43210

The Center maintains a Task Inventory Exchange (TIE). Directories of task inventories are available from the National Center.

EDUCATIONAL RESEARCH INFORMATION CENTER (ERIC)

There are fifteen different clearinghouses distributed throughout the United States with each concentrating on a particular area of education. Most state universities have a complete microfilm collection of ERIC materials in their libraries. Most can also provide computer search services at a nominal cost.

THE NATIONAL NETWORK FOR CURRICULUM COORDINATION IN VOCATIONAL AND TECHNICAL EDUCATION (NNCCVTE)

The East Central Curriculum Management Center services the region which includes Wisconsin. Address: Sangamon State University, Springfield, Illinois 62701

VOCATIONAL-TECHNICAL EDUCATION CONSORTIUM OF STATES (V-TECS)

The purpose of V-TECS is to develop catalogues of performance objectives and criterion referenced measures based upon occupational tasks. Each state participating uses a standard prescribed procedure for analyzing the occupation which serves as a basis for curriculum development. In Wisconsin, these catalogues are available through The Vocational Studies Center, University of Wisconsin, 964 Educational Sciences Building, 1025 West Johnson Street, Madison, Wisconsin 53706.

Appendix - B

Definitions for Competency-Based Instruction

The Following is a List of General Terminology which Applies to Competency-Based Instruction. A List of Curriculum Components, with Definitions, is Provided in the Next Section.

CAREER LADDER (EMPLOYMENT SPIRAL) - A related group of occupations through which upward mobility is possible and/or likely.

COMPETENCY - The ability to perform a job skill at an acceptable level. (This term is NOT synonymus with duty or task in WisCom.)

COMPETENCY-BASED INSTRUCTION (CBI) - Instruction that derives its content from the tasks performed in an occupation and assesses student performance on the basis of preset performance standards.

COMPETENT - Able to function at a minimally acceptable level for job entry.

COURSE - A number of related performance objectives taught under a single title and credit/hour assignment.

CRITERION-REFERENCED EVALUATION - See OBJECTIVE-BASED EVALUATION.

DUTY - A group of related tasks, which constitutes a major area or segment of work within a job.

ELEMENT - An action, operation or activity which is a segment of a task.

ENABLING OBJECTIVE (MICRO-PERFORMANCE OBJECTIVE) - A statement that specifies a sub-skill or element of information that must be learned to perform the more complex task described in the performance objective. A series of enabling objectives leads the student step-by-step to mastery of the performance objective.

INSTRUCTIONAL ANALYSIS - A technique or procedure used to accurately identify the essential content to be included in a designated instructional offering.

JOB (OCCUPATION) - A collection of duties and tasks which makes up the work assignment of a single group of incumbent workers performing the same type of work.

JOB DESCRIPTION - A narrative description of the job in general terms, sometimes divided into sections such as Duties, Responsibilities, Special Aptitudes, Educational Prerequisites, etc.

JOB TITLE - An identifying term for the job/occupation.

LEARNING RESOURCES - See RESOURCES, LEARNING

OBJECTIVE-BASED EVALUATION - Testing which references and uses as its basis the stated performance objectives.

OCCUPATION, PRIMARY - See PRIMARY OCCUPATION.

OCCUPATIONAL ANALYSIS - The systematic identification of the essential tasks which workers are required to perform in a job.

OCCUPATIONAL AREA OF INTEREST - A primary occupational area which is of interest to a person considering career possibilties, (i.e. Banking, Automotive, Education, etc.)

OCCUPATIONAL CLUSTER - A group of jobs/occupations that are related on the basis of required skills, knowledge and type of materials and equipment worked upon.

OCCUPATIONAL SPECIALTY - A job title which, along with one or more others, exists within a primary occupational category.

OCCUPATIONAL SUB-SPECIALTY - A further division of an occupational specialty which may exist as a separate job title in very large firms.

PERFORMANCE GUIDE - A sequential listing of elements (steps) ordinarily followed when performing a task.

PERFORMANCE OBJECTIVE - A statement of desired learning outcome which describes the conditions under which the task is to be performed, the specific action to be demonstrated and the minimum standards of acceptable performance.

PERFORMANCE TEST - A type of criterion-referenced test that requires the student to actually do a task, given the conditions and standards specified in the performance objective.

PRIMARY OCCUPATION - A general job category in which specialization exists, creating occupational specialties. Some CBE users use the term JOB in lieu of occupation.

RESOURCES, LEARNING - All tools, equipment, supplies and print and nonprint media used to facilitate the teaching/learning process.

TASK - A measurable, meaningful element of work from a larger occupational activity (duty), having a definite beginning and ending point.

TASK ACTIVITIES - Steps of procedure (elements) in the performance of a task.

TASK ANALYSIS - The systematic examination of a task and the identification of the steps, operations, or elements involved in the task.

TASK INVENTORY - A list of tasks grouped into duties which are normally performed by individuals in a specific job.

Appendix - C

Definitions of Curriculum Components

General Terminology for Competency-Based Instruction was Presented in the Previous Section. The following is a List of Curriculum Components with Definitions.

ADVANCED PLACEMENT INFORMATION - Description of the process through which a student may receive advanced placement within the course without actually completing the learning activities.

ADVANCED STANDING INFORMATION - Description of the process through which a student can receive credit for the course without actually completing the learning activities.

ADVISEMENT PLAN - A systematic plan for providing support services to students, designed to help them to achieve success in their learning programs.

ANSWER KEY - A listing of correct responses used as a reference in scoring student evaluations.

ANSWER SHEET - A tailored form used for recording responses to evaluation questions.

ASSIGNMENT SHEET - Provides a description of a designated learning activity, as well as guidelines for its completion. Used for activities which do not result in a completed project as may be the case with PROJECT SHEETS. Examples include finding the answers to study questions, completing mathematical calculations, etc. Some educators use the PROJECT SHEETS and the ASSIGNMENT SHEETS for the same purpose.

ATTENDANCE RECORDS - A record format used to keep permanent records of class attendance.

AUGMENTATION UNIT - Developmental sub-routine provided for students whose background has not prepared them for the challenges of the scheduled learning experiences.

CLASS POLICIES AND PROCEDURES - Classroom management rules and regulations for the students' guidance. Topics covered include include attendance, safety, conduct, and other similar topics.

COMPUTER-BASED EVALUATION - Student evaluation using techniques of interactive computer routines to assess student competency.

COUNSELOR - School staff member designated to provide counseling and career advisement services to students enrolled in the course.

COURSE COGNITIVE PROFILE - Symbolic description of the cognitive learning style of the student most likely to succeed in the course.

COURSE CONTENT OUTLINE - A listing of units and modules of instruction included in the course.

COURSE DESCRIPTION - Narrative description of the course, used to communicate course content to students, educators, and the public at large.

COURSE OBJECTIVE LIST - A listing of all the objectives included in the course, correlated with the unit, module and task each objective is related to.

COURSES WITHIN PROGRAM - See PROGRAM COURSE LIST.

CURRICULUM RESPONSIBILITY - Name of instructor, coordinator, and counselor responsible for regular, periodic review and updating of curriculum.

CURRICULUM PROFILE - A checkoff type of worksheet which identifies the characteristics and specific contents of a set of curriculum materials.

ENROLLMENT PATTERNS - Description of pattern, cycles and/or schedules for admitting new students into the course.

EQUIPMENT LIST - Listing of all tools and equipment used in the course. (This is one of four parts of the Resource List. The others are Media List, Materials/Supplies List, and Resource Persons and Organizations List.)

EVALUATION OF COURSE - An instrument used to conduct an evaluation of the course by the students.

FIELD TRIP GUIDE - A worksheet used to provide a meaningfulframework for experiencing and interpreting field trips. Included is introductory information, as well as follow-up materials to reinforce the value of the field trip as a learning experience.

HOURS, ESTIMATED - Average estimated time required to complete a learning sequence.

INFORMATION SHEET - A curriculum component used to convey printed and graphic instructional content which is not available from other readily usable resources. This includes new text materials written by the instructional staff, as well as content adapted or paraphrased from existing sources.

INSTITUTIONAL DATA SHEET - A summary sheet of information unique to the institute which conducts the instruction. Includes course approval data, course offering information, student requirements such as textbooks, supplies and equipment to be purchased, and curriculum maintenance responsibilities.

INSTRUCTORS' GUIDE - A set of guidelines which describe management strategies and practices being used in the instructional setting. Intended for use by the instructional staff, these

guidelines help provide consistency between instructors and class locations.

JOB DESCRIPTION - A statement of duties, skills, and characteristics required to successfully perform in an occupation.

JOB MOBILITY CHART - A grouping of jobs within an occupational cluster which illustrates employment possibilities and advancement potential with various levels of educational preparedness.

JOB SHEET - See PROJECT SHEET.

JOB TITLE - Title as listed in the Dictionary of Occupational Titles (D.O.T.).

JOB TITLES WITHIN PROGRAM - D.O.T. job titles which program seeks to prepare trainees for.

LAB EXPERIMENT - A learning activity, usually conducted in a laboratory setting, designed to offer a chance to observe or confirm important principles, properties or relationships being studied.

LEARNING CONTRACT - A written agreement, signed by the student, which details the learning goals and timetable for completion.

MATERIALS/SUPPLIES LIST - Listing of all expendable supplies and materials used in the course. (This is one of four parts of the RESOURCE LIST. The others are MEDIA LIST, EQUIPMENT LIST, AND RESOURCE PERSONS AND ORGANIZATIONS LIST.)

MATH LEVEL - Math skills needed for successful completion of learning activities.

MEDIA LIST - Listing of all print and non-print media resources used in the course. (This is one of four parts of the RESOURCE LIST. The others are EQUIPMENT LIST, MATERIALS/SUPPLIES LIST, and the RESOURCE PERSONS and ORGANIZATIONS LIST.)

MODULE - A set of instructional materials related to the learning of a task and designed to help students manage their own instruction.

MODULE OVERVIEW - An introductory sheet of information within each module which lists the task, prerequisites, estimated time, introduction. content outline and the related performance objectives.

MODULE STUDY GUIDE - The "road map" within each module to guide the students' progress from start to finish. The GUIDE provides a sequential listing of all learning activities and progress evaluations, as well as the learning resources which support each step.

MODULE TITLE SHEET - Each instructional module is structured with a module title sheet. The title sheet provides a durable, attractive cover for each module. The use of individualized

titles, layouts, and graphics allows for flexibility in design so that the department/program can adopt a format unique to it.

NOTE TAKING GUIDE SHEET - Note taking guide sheets provide a systematic framework for recording notes to follow a lecture/ discussion, demonstration, reading assignment, or other designated learning experience.

OBJECTIVE DEVELOPMENT WORKSHEET - A worksheet which lists the task and task performance guide, and provides a place to record the related performance objectives.

OBJECTIVE, TERMINAL PERFORMANCE - A statement of desired learning outcomes which describes the conditions under which the task is to be performed, the specific action to be demonstrated and the minimum standards of acceptable performance.

OCCUPATIONAL ANALYSIS FORM - A form used to collect information regarding duties and tasks performed in an occupation, as well as related tools, equipment, supplies and other relevant information.

OCCUPATIONAL VOCABULARY LIST - A listing of vocabulary unique and necessary to a course or program area. This curriculum component may include practice routines as well as mere definitions of terms.

ORAL/VERBAL EVALUATION - Student evaluations using oral questions and responses or techniques of discussion and debate to verify competence.

OUTLINE, COURSE CONTENT - A listing of units and modules of instruction included in the course.

OUTLINE, PROGRAM CONTENT - A listing of major topics and subtopics included in an instructional program.

PACKAGE, LEARNING - All of the materials required for instruction in a particular job task, including all of the contents of the learning MODULE, the INSTRUCTORS' and STUDENT GUIDES as well as all related learning resources.

PAPER-PENCIL EVALUATION - Student evaluation using paper as the means of presenting questions and collecting responses.

PERFORMANCE CHECKLIST EVALUATION - Student evaluation which assesses student competence based on correct performance of a process or procedure, in both its sequence and detail.

PERFORMANCE/PRODUCT CHECKLIST EVALUATION - A type of performance exam which assesses both the steps of procedure and the end result. Both the process and the product are important in judging performance.

PRACTICE EXERCISE (WORKSHEET) - A learning activity designed to apply and reinforce instructional content previously presented.

PREREQUISITES - Previous learning required to ensure a logical continum in the learning process.
background.

PRESCRIPTION - A learning activity sequence designed specifically for an individual student, taking into consideration his or her unique needs and attributes as determined through a needs assessment, with the intent of maximizing the benefits of the learning experience.

PROCEDURE SHEET - See PROJECT SHEET.

PRODUCT CHECKLIST EVALUATION - A type of performance evaluation in which the product or end result of the performance is judged.

PROFESSIONAL READING GUIDE - Guidelines for maximizing the effectiveness of professional reading experiences. The guide identifies the assignment and may provide introductory as well as follow-up information.

PROFESSIONAL ORGANIZATION - A group whose purpose is to foster and promote the development of a profession and its incumbent workers in program-related jobs.

PROGRAM BLOCKING WORKSHEET - A diagram which illustrates the instructional blocks which make up a program, as well as the job possibilities at various exit points.

PROGRAM CONTENT OUTLINE - A listing of major topics and subtopics included in an instructional program.

PROGRAM COURSE LIST - Official course structure of program which lists course numbers, types (i.e. major, related, elective), and course titles.

PROGRAM GOALS - Broad student-oriented action statements which identify abilities to be demonstrated before completion of an instructional program.

PROGRAM RELATIONSHIPS - A statement identifying the relationship of a course to all degree, diploma and/or certificate programs in which it fulfills a specific requirement.

PROGRAM TITLE - Official title of program as approved by the Wisconsin Board of VTAE.

PROJECT SHEET (JOB SHEET, PROCEDURE SHEET) - Project sheets provide detailed instructions for the performance of a learning experience. Included are such items of information as the tools, equipment, supplies, and performance guide, as well as pertinent illustrations and self-evaluation criteria. (Also called JOB SHEET and PROCEDURE SHEET by some educators.)
QUEST EXPERIENCE - An optional assignment available to provide a challenging experience for students whose ability or background has prepared them for such challenge.

READING LEVEL - Minimum reading level required of students entering instructional sequence to successfully complete the learning activities.

RESOURCE LIST - A listing of all resources which relate to a specific instructional sequence. Though resources are identified in specific learning sequences in each MODULE STUDY GUIDE, this document provides a convenient, all inclusive listing of resources by module, unit, course, and program area. The resource inventory consists of three parts: 1. MEDIA LIST, 2. EQUIPMENT LIST, 3. MATERIALS/SUPPLIES LIST, and 4. RESOURCE PERSONS AND ORGANIZATIONS LIST. Each of these is separately defined under its own heading elsewhere in this list.

RESOURCE PERSONS AND ORGANIZATIONS LIST - Persons and organizations which provide support for the instruction through direct involvement or other professional support.

REVIEW EXERCISE - A learning activity designed to apply and reinforce instructional content previously presented, usually to establish readiness for an evaluation.

SELF-EVALUATION EXERCISE - See SELF-PROGRESS REVIEW.

SELF-PROGRESS REVIEW - The self-progress review is an ungraded learning activity designed to enable students to evaluate their own progress. The review can address cognitive, affective as well as psychomotor learning elements.

SPECIAL REQUIREMENTS - Supplies, tools, clothing and other required items which need to be acquired by students in order to participate in the learning activities.

STUDENT EVALUATION SYSTEM - Description of the evaluation methods used in the course, and the role of each in the determination of course grade.

STUDENT GUIDE - A handout booklet or module which provides students orientation to the methods, procedures and standards used in the course.

STUDENT ORGANIZATION - A group consisting of student members whose purpose is to foster and promote the development of the student as a competent candidate for employment in a program-related job.

STUDENT PROGRESS RECORD - A format for recording student achievement which provides a continuous record from the entry of the student to the point of graduation or withdrawal, as well as in the student's permanent records.

STUDY GUIDE (MODULE STUDY GUIDE) - The "road map" within each module to guide the students' progress from start to finish. The GUIDE provides a sequential listing of all learning activities and progress evaluations, as well as the learning resources which support each step.

TASK DETAILING SHEET - See TASK PERFORMANCE GUIDE.

TASK LIST (COURSE) - The list of tasks which from the basis for the objectives included in the course.

TASK LIST (JOB) - List of tasks performed in specified job.

TASK LIST (PROGRAM) - List of tasks in duty categories in which the program is designed to develop competence.

TASK PERFORMANCE GUIDE - A worksheet which lists the correct steps of procedure for the performance of a job task as determined in a Task Analysis.

TASK RATING FORM - A form used for collecting information during an occupational analysis regarding the frequency of performance and the importance of tasks.

TEXTBOOKS, LEARNING MANUALS - Textbooks and learning manuals are used to convey larger segments of printed information to students. Textbooks can be commercially produced, published by the school, purchased from other educational agencies, or can be commercial documents (i.e., parts catalogs, trade specifications manuals, etc.) purchased or obtained free of charge from business establishments.

WORKSHEET (PRACTICE EXERCISE) - A learning activity designed to apply and reinforce instructional content previously presented.